

## ABSTRACT

### **Effect Of Exposure To Benzene Vapor Against Immunoglobulin G And Worker Health Complaints At Gas Stations In Surabaya Through Phenol Levels In Urine**

Benzene was the chemical substance of gas station product which led to cancer. The chronic exposure of benzene effected cellular and humoral immunological. This study aim to analyze the effect of exposure to vapor benzene against immunoglobulin G and health complaint of gas station worker in Surabaya through phenol level in urine.

The method of this study was analytical observation with cross sectional study. Research sites at gas station of Sisingamangaraja street XIII, Kenjeran street 99 and Sumatera street 25. The research was conducted from March to July 2014. The population of this study was 2 population that were the operator of gas station and the administration worker of gas station in Surabaya with some criteria. Sample size had 22 persons that was taken by simple random sampling, 11 persons from each operator and administration worker. Data analysis used linear regression logistic regression.

The results of this study shown that the level of benzene in air effected phenol urine level ( $p < 0,05$ ) using linear regression. The effect of phenol urine level to IgG concentration was significant ( $p < 0,05$ ) using linear regression, while health complaint was not effected by phenol urine level ( $p < 0,05$ ).

The conclusion of this study was exposure of benzene vapor effect increasing of immunoglobulin G of worker at gas station through phenol level in urine. Otherwise, there is no effect of exposure of benzene vapor to health complaint. Monitoring periodically urine phenol levels in the gas station workers in Surabaya to determine intoxication benzene vapor. It requires to use personal protective equipment for workers filling stations which include gas masks, gloves, shoes, and special clothes. It should be made a habit of washing hands after work.

**Keywords:** vapor benzene exposure, gas station, phenol urine level, immunoglobulin G, health complaint